

What is claimed is:

- 375/225  
all  
cls 1-24
1. In a system including a first generator that generates a first signal, a second generator that generates a second signal, and a conductor, a method comprising:  
reading a portion of the first signal and processing the first signal in a first circuit;  
receiving the first signal from the first circuit;  
mixing the first signal, received in the previous step, with the second signal to send a third signal on the conductor;  
subsequently, reading a portion of the first signal and processing the first signal in a second circuit;  
receiving the first signal from the second circuit; and  
mixing the first signal, received in the previous step, with the second signal to send the third signal on the conductor.
  2. The method of claim 1 wherein processing the first signal in the first circuit includes encoding to include the first signal in an encoded signal.
  3. The method of claim 1 wherein processing the first signal in the first circuit includes *discrete* encoding to include the first signal in a discrete multitone technology signal.
  4. The method of claim 1 wherein the first step of mixing includes generating the third signal to include a voice signal.

5. The method of claim 1 wherein the first step of mixing includes generating the third signal to include a voice signal, and the second step of mixing includes generating the third signal to include the voice signal.

6. The method of claim 1 wherein the first step of mixing includes generating the third signal to include a voice signal and a discrete multitone technology signal.

7. The method of claim 1 wherein the first signal includes a routing signal and the method further includes the step, performed before the step of processing the first signal in the second circuit, of

sending a fourth signal to the second circuit to allow the second circuit to recognize the routing signal.

8. The method of claim 7 wherein the first generator sends the fourth signal to the second circuit.

9. A processing system for a first system including a conductor, the processing system comprising:

a first generator that generates a first signal;

a second generator that generates a second signal;

a first circuit configured to read a portion of the first signal and process the first signal;

a second circuit configured to read a portion of the first signal and process the first signal;

a third circuit configured

to mix the first signal, from the first circuit, with the second signal to send a third signal on the conductor, or

to mix the first signal, from the second circuit, with the second signal to send a third signal on the conductor.

10. The processing system of claim 9 further including

a housing supporting a plurality of current paths;

a first assembly with a connector for removably coupling the first assembly to the housing, the connector having a plurality of connector conductors for sending signals between the first assembly and the plurality of current paths; and

a second assembly with a connector for removably coupling the second assembly to the housing, the connector having a plurality of connector conductors for sending signals between the second assembly and the plurality of current paths,

wherein the first circuit is on the first assembly and the second circuit is on the second assembly.

11. The processing system of claim 9 wherein the first circuit includes an encoder for encoding the first signal.

12. The processing system of claim 9 wherein each of in the first and second circuits includes an encoder for encoding the first signal in a discreet multitone technology signal.

13. The processing system of claim 9 wherein the second signal includes a voice signal.

14. The processing system of claim 9 wherein the third circuit includes a node for generating the third signal to include a voice signal and discreet multitone technology signal.

15. The processing of claim 9 wherein the first signal includes a routing signal, and the second circuit receives a fourth signal to allow the second circuit to recognize the routing signal.

16. The processing system of claim 15 wherein the first generator includes circuitry to generate the fourth signal.

17. A processing system for a first system including a conductor, the processing system comprising:

a first generator that generates a first signal;

a second generator that generates a second signal;

means for reading a portion of the first signal and processing the first signal in a first circuit;

means for receiving the first signal from the first circuit;

means for mixing the first signal, received by the previous means, with the second signal to send a third signal on the conductor;

means for subsequently, reading a portion of the first signal and processing the first signal in a second circuit;

means for receiving the first signal from the second circuit; and

means for mixing the first signal, received in the previous step, with the second signal to send a third signal on the conductor.

18. The processing system of claim 17 further including

a housing supporting a plurality of current paths;

a first assembly with a connector for removably coupling the first assembly to the housing, the connector having a plurality of connector conductors for sending signals between the first assembly and the plurality of current paths; and

a second assembly with a connector for removably coupling the second assembly to the housing, the connector having a plurality of connector conductors for sending signals between the second assembly and the plurality of current paths,  
wherein the first circuit is on the first assembly and the second circuit is on the second assembly.

19. The processing system of claim 17 wherein the first circuit includes an encoder for encoding the first signal.

20. The processing system of claim 17 wherein each of in the first and second circuits includes an encoder for encoding the first signal in a discrete multitone technology signal.

21. The processing system of claim 17 wherein the second signal includes a voice signal.

22. The processing system of claim 17 wherein the third circuit includes a node for generating the third signal to include a voice signal and discrete multitone technology signal.

23. The processing of claim 17 wherein the first signal includes a routing signal, and the second circuit receives a fourth signal to allow the second circuit to recognize the routing signal.

24. The processing system of claim 23 wherein the first generator includes circuitry to generate the fourth signal.

25. A method for a system including a plurality of encoders each for receiving a digital signal to generate a respective encoded signal, a generator for generating a test signal, a plurality of cards each coupled to a respective conductor for sending signals to a respective subscriber, the method comprising the step, performed in each card, of

maintaining a first current path between a respective encoder and the respective conductor, to transfer the encoded signal from the encoder to a respective subscriber, and the following

subsequent steps, performed in one of the cards, of

breaking the first current path;

making a second current path between the generator and the respective conductor, to transfer the test signal from the generator to the conductor, and the following step, performed currently with the two previous steps, in remaining ones of the cards, of

maintaining the first current path between the respective encoder and the respective conductor, to transfer the respective encoded signal from the encoder to the respective subscriber.

26. The method of claim 25 further including the step, performed after the making step, of connecting another encoder to the second current path.

27. A method for a system including a plurality of encoders for receiving a digital signal to generate a plurality of respective encoded signals, a generator for generating a test signal, a plurality of cards each coupled to a plurality of respective conductors<sup>s</sup> for sending signals to a plurality of respective subscribers, the method comprising the step, performed in each card, of

maintaining first current paths between a respective encoder and the respective conductors, to transfer the encoded signals from the encoder to the respective subscribers, and the following subsequent steps, performed in one of the cards, of

breaking one of the first current paths;

making a second current path between the generator and one of the respective conductors, to transfer the test signal from the generator to the one of the respective conductors, and the

following step, performed in remaining ones of the cards currently with the two previous steps, of maintaining the first current paths between the respective encoder and the respective conductors, to transfer the encoded signals from the encoder to the respective subscribers.

28. A processing system for a first system having a plurality of conductors and a plurality of subscribers, the processing system comprising:

a plurality of encoders each for receiving a digital signal to generate a respective encoded signal;

a generator for generating a test signal;

a plurality of cards each coupled to a respective conductor for sending signals to a respective subscriber, each card including

a current switch for maintaining a first current path between a respective encoder and the respective conductor, to transfer the encoded signal from the encoder to a respective subscriber, and for making a second current path between the generator and the respective conductor, to transfer the test signal from the generator to the conductor.

29. The processing system of claim 28 wherein each current switch includes a first current switch for maintaining the first current path, and a second current switch for maintaining the second current path.

30. The processing system of claim 28 further including a current switch for connecting



another encoder to the second current path.

31. The processing system of claim 28 wherein each current switch includes a mettalic relay.

32. A processing system for a first system having a plurality of conductors and a plurality of subscribers, the processing system comprising:

a plurality of encoders for receiving a digital signal to generate a plurality of respective encoded signals;

a generator for generating a test signal;

a plurality of cards each coupled to a plurality of respective conductor<sup>S</sup> for sending signals to a plurality of respective subscribers;

means for maintaining first current paths between a respective encoder and the respective conductors, to transfer the encoded signals from the encoder to the respective subscribers;

means, activated in one of the cards, for making a second current path between the generator and one of the respective conductors, to transfer the test signal from the generator to the one of the respective conductors; and

means, activated in remaining ones of the cards, for maintaining the first current paths between the respective encoder and the respective conductors, to transfer the encoded signals from the encoder to the respective subscribers.

33. A processing system for a first system having a plurality of conductors and a plurality of subscribers, the processing system comprising:

a plurality of encoders each for receiving a digital signal to generate a respective encoded signal;

a generator for generating a test signal;

a plurality of cards each coupled to a respective conductor for sending signals to a respective subscriber;

means, activatable for each card, for maintaining a first current path between a respective encoder and the respective conductor, to transfer the encoded signal from the encoder to a respective subscriber;

means for making, activated in one of the card, a second current path between the generator and the respective conductor, to transfer the test signal from the generator to the conductor;

means for maintaining, activated in remaining ones of the cards, the first current path between the respective encoder and the respective conductor, to transfer the respective encoded signal from the encoder to the respective subscriber.

34. The system of claim 33 further including means for connecting another encoder to the second current path.

35. A processing system for a first system having a plurality of conductors and a plurality of subscribers, the processing system comprising:

a plurality of encoders for receiving a digital signal to generate a plurality of respective encoded signals;

a generator for generating a test signal;

a plurality of cards each coupled to a plurality of respective conductor for sending signals to a plurality of respective subscribers, each card associated with

a current switch for maintaining first current paths between a respective encoder and the respective conductors, to transfer the encoded signals from the encoder to the respective subscribers, and for making a second current path between the generator and one of the respective conductors, to transfer the test signal from the generator to the one of the respective conductors.